



**Bio-Gas Facility**

**Environmental Benefits**

The Cavendish Bio-Gas Facility is an example of our approach to researching, investing and implementing innovative ways that we can create sustainable and environmentally friendly processing methodologies. We have a waste water treatment plant on site, as do most other processors. These facilities treat waste water produced from processing. However what sets the Bio-Gas Facility apart is that it takes the solid waste material from potato processing and, through a natural process similar to composting, converts it into a methane-rich biogas that can be used in our plants. It also produces a natural biosolid that is very similar in appearance to black earth. This can be spread on fields and acts as a soil conditioner and natural fertilizer.

*There are many environmental benefits:*

<b>Process Improvement/Change</b>	<b>Environmental Benefits</b>
<p>Reduced dependence on fossil fuels in the processing plants</p>	<p>Reduction of plant emissions is estimated at 35 KT which results in an overall reduction of 30-35% for Cavendish Farms’ operations.</p> <p>Replaces oil with a stable and controlled renewable energy... processing waste is used to create energy which can be re-used in production... a self-sustaining system with reduced dependence on fossil fuels.</p>
<p>Anaerobic digestion process is a natural process. Organic waste is converted into a methane-rich biogas, with a natural fertilizer produced as a byproduct.</p>	<p>Eliminates the need to dispose of potato waste on land, which can in some cases causes plant disease. Over time this will have a positive impact as it improves yield of healthy potato plants.</p> <p>Creates a natural fertilizer for farmer’s fields-reduces the need for chemical fertilizers which usually contain phosphorous. Natural born P-sources are limited like crude oil. There is an growing demand worldwide because of intensified food production.</p> <p>Reduces the potential for negative impact on ground water. (In the past, spreading potato waste on fields potentially allowed nutrients</p>

	<p>such as nitrogen to work their way into groundwater or streams.)</p> <p>Virtually no smell compared to potato waste leading to improved air quality wherever used on the Island.</p> <p>Most of the nitrogen in this new, digested by-product is in the form of ammonia, which is a more effective fertilizer.</p> <p>Biosolids produced are an <i>organic</i> fertilizer as opposed to a <i>chemical</i> fertilizer.</p> <p>Dark colour similar to black earth and is more appealing than potato waste in terms of overall appearance.</p>
<p>Reduced trucking requirements- fewer trucks bringing fuel to the plant, and also fewer trucks required to remove biosolids from the facility</p>	<p>Estimated annual reduction in delivery of over 300 tanker loads of Bunker C oil, or 10,000,000 less litres of oil used. Each tanker of Bunker C oil delivered required a 350 km round trip for the truck.</p> <p>The biosolids produced are cleaner and of a lower volume than potato waste, therefore far fewer trucks will be needed to transport remnant material offsite. The effort of trucking 100,000 tons of potato waste offsite will be reduced to transporting 8,000 tons of biosolids offsite. These trips now are local, whereas in the past they have been shipped as far away as Quebec. There is a reduction in trucking from the processing plants of approximately 1100 km per day.</p> <p>Reduced trucking means reduction in consumption of diesel fuel, further reducing carbon emissions.</p>
<p>Sustainable process mindset</p>	<p>More natural growing processes through use of biosolids as natural fertilizer.</p> <p>Reduced dependence on fossil fuels.</p> <p>Efficient, closed-loop process, which gathers wastes from processing, anaerobically digests them to produce methane-rich biogas, and then uses that energy source directly in the production facility.</p>

